

CLAIMS

1. A skid steer vehicle comprising:

a chassis having a right side, a left side, a front end, and a rear end, said chassis defining a lateral axis that extends from the left side to the right side of the chassis parallel to the ground;

an internal combustion engine mounted on the chassis;

first and second hydraulic pumps coupled to the engine to be driven thereby;

a left side suspension including a left side suspension beam having a front end and a rear end and a central portion, wherein said left beam extends fore-and-aft along a left side of the vehicle, and further wherein said left beam is pivotally coupled to the chassis at said central portion thereof to pivot said left beam about said lateral axis with respect to said chassis, a left front wheel coupled to the front end of the left beam at a location forward of the central portion, a left rear wheel coupled to the rear end of the left beam rearward of the central portion, and a first hydraulic motor mounted to the left side suspension beam, wherein said first motor is drivingly coupled to the front wheel and the rear wheel; and

a right side suspension including a right side suspension beam having a front end and a rear end and a central portion, wherein said right beam extends fore-and-aft along a right side of the vehicle, and further wherein said right beam is pivotally coupled to the chassis at said central portion thereof to pivot said right beam about said lateral axis with respect

to said chassis, a right front wheel coupled to the front end of the right beam at a location forward of the central portion, a right rear wheel coupled to the rear end of the right beam rearward of the central portion, and a second hydraulic motor mounted to the right beam, wherein said second motor is drivingly coupled to the front wheel and the rear wheel.

2. The skid steer vehicle of claim 1, wherein the first motor is drivingly coupled to the left front wheel and the left rear wheel to drive said left front and rear wheels in rotation, and wherein the second motor is drivingly coupled to the right front wheel and the right rear wheel to drive the right front and right rear wheels.

3. The skid steer vehicle of claim 2, further comprising a first driveshaft coupled to and between the first motor and the left front and left rear wheels, the vehicle further comprising a second driveshaft coupled to and between the second motor and the right front and right rear wheels.

4. The skid steer vehicle of claim 3, wherein the first motor is fixed to the left beam to pivot therewith and wherein the second motor is fixed to the right beam to pivot therewith.

5. The skid steer vehicle of claim 4, further comprising a first planetary gear set coupled to and between the first motor and the first driveshaft, and

comprising a second planetary gear set coupled to and between the second motor and the second driveshaft.

6. The skid steer vehicle of claim 5, further comprising a left front axle housing fixed to the front end of the left beam, a left rear axle housing fixed to the rear end of the left beam, a right front axle housing fixed to the front end of the right beam, and a right rear axle housing fixed to the rear end of the right beam.

7. The skid steer vehicle of claim 6, wherein the left front, left rear, right front and right rear axle housings each include a laterally extending axle, and further wherein the laterally extending axles of the left front and left rear axle housing are drivingly coupled to the first driveshaft, and further wherein the laterally extending axles of the right front and right rear axle housings are drivingly coupled to the second driveshaft.

8. The skid steer vehicle of claim 2, wherein the first hydraulic pump is fluidly coupled to the first motor to drive the first motor, and the second hydraulic pump is connected to the second motor to drive the second motor in rotation.

9. A suspension for a skid steer vehicle, said vehicle having a chassis with left and right sides, a longitudinal axis, a lateral axis, an internal combustion engine and first and second hydraulic pumps coupled to the engine to be driven thereby, the suspension comprising:

a first suspension beam having a front end and a rear end and a central portion wherein said first beam is configured to extend fore-and-aft along a first side of the vehicle, and further wherein said first beam is configured to be pivotally coupled to the chassis at said central portion of said first beam to pivot said first beam about said lateral axis with respect to said chassis;

a first front wheel coupled to the front end of the first beam at a location forward of the central portion thereof;

a first rear wheel coupled to the rear end of the first beam rearward of the central portion; and

a first hydraulic motor mounted to the first beam, wherein said first motor is drivingly coupled to the first front wheel and the first rear wheel and is configured to be coupled to and driven by the first hydraulic pump.

10. The suspension of claim 9, further comprising:

a second suspension beam having a front end and a rear end and a central portion wherein said second beam is configured to extend fore-and-aft along a second side of the vehicle opposite the first side of the vehicle, and further wherein said second beam is configured to be pivotally coupled to the chassis at said central portion of said second beam to pivot said second beam about said lateral axis with respect to said chassis;

a second front wheel coupled to the front end of the second beam at a location forward of the central portion;

a second rear wheel coupled to the rear end of the second beam rearward of the central portion thereof; and

a second hydraulic motor mounted to the second beam, wherein said second motor is drivingly coupled to the second front wheel and the second rear wheel and is configured to be coupled to and driven by the second hydraulic pump.

11. The suspension of claim 9, further comprising:

a first driveshaft extending longitudinally through the first suspension beam from the first front wheel to the first rear wheel, wherein the first driveshaft is configured to drive both the first front and rear wheels in rotation, and further wherein the first driveshaft is driven by the first hydraulic motor, which is fixed to the central portion of the first beam.

12. The suspension of claim 11, wherein the first motor is configured to extend inside said chassis.

13. The suspension of claim 12, further comprising a first planetary gear set coupled to and between the first motor and the first driveshaft.

14. The suspension of claim 13, further comprising a first front axle housing fixed to the front end of the first beam, and a first rear axle housing fixed to the rear end of the first beam.

15. The suspension of claim 14, wherein the first front and first rear axle housings each include a laterally extending axle, and further wherein each of said laterally extending axles are drivingly coupled to the first driveshaft through a bevel gear set.

16. The suspension of claim 11, further comprising:

a second driveshaft extending longitudinally through the second suspension beam from the second front wheel to the second rear wheel, wherein the second driveshaft is configured to drive both the second front and rear wheels in rotation, and further wherein the second driveshaft is driven by the second hydraulic motor, which is fixed to the central portion of the second beam.

17. The suspension of claim 16, wherein the first and second motors are configured to extend inside the chassis.

18. The suspension of claim 17, further comprising first and second planetary gear sets, wherein the first planetary gear set is coupled to and between the first motor and the first driveshaft, and further wherein the second planetary gear set is coupled to and between the second motor and the second driveshaft.

19. The suspension of claim 15, wherein the first driveshaft is an integral member over the entire distance from the first front to the first rear axle housings.

20. The suspension of claim 15, wherein the first and second axle housings and the first suspension beam are not formed integrally, but are removably coupled together.

21. The suspension of claim 10, wherein the first and second front wheels are configured to rotate about a first rotational axis and said first and second rear wheels are configured to rotate about a second rotational axis when said first and second beams are in a first relative pivotal position.

22. The suspension of claim 21, wherein the first rotational axis, the second rotational axis and the lateral axis are parallel.